

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/010576 A1

(51) International Patent Classification⁷: **H03F 3/72, 3/45**

Javad [CA/CA]; Sirific Wireless Corporation, 460 Phillip Street, Suite 300, Waterloo, Ontario N2J 5J2 (CA).

(21) International Application Number:

PCT/CA2003/001066

(74) Agents: **LEDWELL, Kent, M.** et al.; Gowling, Lafleur, Henderson, LLP, 160 Elgin Street, Suite 2600, Ottawa, Ontario K1P 1C3 (CA).

(22) International Filing Date: 24 July 2003 (24.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/398,183

24 July 2002 (24.07.2002) US

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (*for all designated States except US*): **SIRIFIC WIRELESS CORPORATION** [CA/CA]; 460 Philip Street, Suite 300, Waterloo, Ontario N2J 5J2 (CA).

Published:

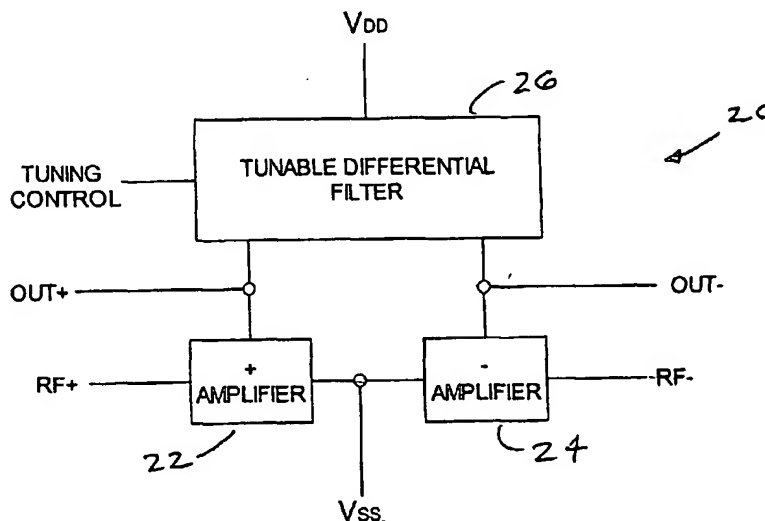
— with international search report

(72) Inventor; and

(75) Inventor/Applicant (*for US only*): **KHAJEHPUR,**

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MULTI-STANDARD AMPLIFIER



(57) Abstract: The present invention relates generally to amplifiers, and more specifically to multi-band and/or multi-standard low noise amplifiers. There are currently no inexpensive, highperformance, fully-integrable, multi-standard low noise amplifiers (LNAs) available. The invention provides a suitable LNA for a multi-band and/or multi-standard receiver in wireless and other applications. This LNA comprises a positive signal amplifier having a first input for receiving a positive RF signal, and a first output for providing an amplified positive RF signal; a negative signal amplifier having a second input for receiving a negative RF signal, and a second output for providing an amplified negative RF signal; and a tunable differential filter having a tuning control input, a third input for said first output and a fourth input for said second output; the frequency response of said tunable differential filter varying with a control signal input to said tuning control input, whereby signal of undesired frequencies may be filtered from said first output and said second output.